TITLE

~~INTEGRATED CARD AND BUSINESS FORM AND METHOD FOR MAKING SAME~~

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates generally to identification cards and business forms, and, in particular, to a method for making and die cutting

Background of the Art

There exist various methods in the art for making business identification cards, such as insurance cards, that are attached to business forms. Typically, the methods include steps of preparing the identification cards separately from the business forms to which the cards are eventually attached. Consequently, most of these methods include multiple presses – wherein one press prepares the identification cards, another press prepares the business forms, and a third press combines the cards and the forms with an adhesive. These methods further include printing and cutting identification cards from rolls of tag stock and applying these cards to predetermined regions on the business forms. Not only do these methods involve a complex array of presses, but they also result in many problems such as the business forms sticking together as a result of ineffective placement of adhesives and laminates.

Preparation of the identification cards and forms further involves the printing of indicia. This information, which includes such items as identification numbers, the name and address of card holder, and policy terms, may be printed on the identification cards themselves or on the forms to which they are attached. Based on the current methods, this step results in various problems. For example, the edges of the cards often become raised from the business forms as they are being fed into the printer. Not only does this occurrence result in damaged cards, but also the printer may become jammed and/or damaged, resulting in further problems and delays. Furthermore, if the adhesive used to attach the cards to the forms was placed on a surface area exceeding that of the business cards, the forms often become stuck together causing further problems and damage to the printing process. Finally, printer flaws are common when the thickness of the identification cards does not equal that of the business forms. If the card has been superimposed on the surface of the carrier sheet, a stacking problem is created in the feed tray of today's high-speed printers because a large number of these sheets when stacked have a tendency to fall over or create an uneven stack due to the uneven surface area of the cards.

Although there have been improvements made to the above-cited problems, disadvantages still exist with the current methods. McKillip, U.S. Pat. No. 5,462,488, shows an example of such an improvement. Generally, the card assembly disclosed by McKillip consists of four layers: upper material, lamina, removable adhesive, and lower material. A die-cut extends from the upper material through the removable adhesive, defining the shape of the card. This assembly is an improvement over the prior art in that the cards are substantially co-planar with their surrounding border thereby reducing many of the problems associated with the printing and stacking of the card forms. However, the card assembly is still problematic when it is fed into standard printers and business equipment because of its thickness, as well as its adhesive materials. For example, when going through high speed or high heat printers, a percentage of the cards will separate or peel from the forms. The final card assembly is also difficult to fan-fold for convenient storage. Further, the coating tends to separate from the paper when the cards are removed from the forms.

There exists a need for an improved identification card and business form assembly and more simplified method for making business identification forms that will avoid the problems faced by the current methods. The instant invention meets this need, and provides an improved integrated card and business form.

SUMMARY OF THE INVENTION

According to its major aspects and briefly stated, the present invention is generally an integrated insurance identification card and business form and a method for making the same.

In particular, the integrated insurance card and business form includes a printable carrier sheet having cards that are releasably attached to a backer on the sheet. The carrier sheet is made of a layer of tag stock having a top surface and a bottom surface. On the top surface of the tag stock is a layer of coating and printed indicia. The bottom surface of the tag includes a first layer of UV curable adhesive that adheres a first layer lamination to the tag stock and further printed indicia. The bottom surface further includes a second layer of UV curable adhesive over the first layer of lamination. This adhesive layer forms the intermediate layer between the first layer of lamination and a second layer of lamination. For the purposes of the present invention, the term "UV curable" refers to materials that are activated through the use of ultra violet rays or light. The identification cards are formed by die cutting the dimensions of the cards through both sides of the tag stock and through the first layer of lamination. The tag

stock further includes a backer that is formed by die cutting the shape of the backer through the first and second layers of lamination. The die cut identification cards are carried by and are releasably attached by the backer to the surrounding tag stock border or business form. The backer further includes printed indicia.

The present invention further includes method for making and die cutting the insurance identification cards and business forms including the following steps: 1) introducing a layer of tag stock having a coated top surface and an uncoated bottom surface into a printing press so that indicia can be printed on the coated surface of tag stock; 2) printing indicia on the coated surface of the tag stock; 3) turning the tag stock so that indicia can be printed on the uncoated surface of the tag stock; 4) applying a first layer of lamination by adhesive means onto the uncoated surface of the tag stock; 5) bonding the adhesive and laminate to tag stock using ultraviolet (UV) light; 6) applying a second layer of lamination onto the first layer of lamination by adhesive means; 7) bonding all the materials including the first and second layers of lamination and the tag stock using UV light; 8) cooling the tag stock; 9) die cutting the cards through the tag stock and through the first layer of lamination; 10) die cutting the shape of a backer through the two lamination layers; 11) printing indicia on the backer; 12) removing waste materials from the surface of the tag stock for disposal; 13) forming line feeding holes adjacent to the side edges of the tag stock; 14) forming perforations to separate predetermined sections of the tag stock; and 15) feeding perforated tag stock into a fan fold machine for fan folding into the finished product.

An important feature of the present invention is the use of the coated tag stock. The top surface of the tag stock is coated with clay to give a higher gloss to the tag. Further, the clay coating blocks the absorption of ink by the tag. This feature gives the tag stock better printability and appearance than a non-coated material.

Another important feature of the present invention is the use of a high-density tag stock. Tag and board stocks are generally very porous materials, which allow absorption of inks into the material. The tag stock used in the present invention is manufactured to a density higher that normal for such applications. This feature insures that the adhesive, which is applied to the uncoated side of the paper, does not soak into the paper. Therefore, a solid bond of the lamination to the tag stock results. Further, the density feature prevents the absorption of inks into the tag stock, which contributes to the better printability and appearance of the insurance identification cards and forms.

Yet another important feature of the present invention is the use of a backer on the bottom surface of the tag stock. The backer, which includes the second layer of lamination and the fugitive adhesive, acts as a carrier for the finished identification cards. The adhesive of the backer is pressure sensitive so that the cards are not permanently adhered to the backer and can be removed without accumulating any residue or tackiness. The use of the backer is an improvement over the prior art in that the backer does not increase the overall thickness of the tag stock. Further, the backer extends over only the portion of the tag stock that will include the cards. Accordingly, this feature reduces many of the feeding and printing problems faced by the prior art.

Still another important feature is the use of a layer of hold out adhesive on the bottom surface of the tag stock. "Hold out" is a term for UV curable inks and adhesives. Hold out prevents the ink or adhesive from diving or soaking into the tag stock being printed. For the purposes of the present invention and the following detailed description and claims, hold out adhesive is the adhesive that is applied to the uncoated bottom surface of the tag stock. Hold out adhesive is formulated to help prevent any absorption or diving into the uncoated bottom surface of the tag stock. This feature, along with the density of the tag stock, creates a superior bond between the first layer of lamination and the tag stock. Further, this feature enhances the printability and appearance of the coated top surface of the tag stock because the adhesive does not soak through the tag stock.

A further feature of the present invention is the use of the first layer of lamination. The first layer of lamination is treated on one side so as to allow the hold out adhesive to adhere the first layer of lamination and the tag stock to form a permanent bond. Preferably, the lamination layer is made of polypropylene film that is a thickness that is optimal to the present application. The untreated side of the first layer of lamination allows the fugitive adhesive to only releasably adhere the second layer of lamination to first layer of lamination and not form a permanent bond. Accordingly, cards may be detached from the carrier sheets without accumulating or bearing any tackiness.

Another feature of the present invention is the use of a flexographic press that is specifically adapted for the method of making the identification cards. Among the various adaptations, the press includes nip rolls, a turn bar, laminating towers, and a cold air system. The nip rolls are designed to control the tensions from the in feed of the press, as well as the overall path of the tag and laminate webs. This feature helps to

improve the quality of the printing and lamination of the cards and business forms. The turn bar is specially designed to handle light tag to heavy board stocks. Consisting of idlers and slant bars, the turn bar allows for a smooth transition of the tag web when it is being turned to print on the opposite side. As those skilled in the art know, the term "web" refers to a large continuous roll of tag stock that is fed into the printing press. The laminating towers enable precise control of the tensions of the layers of laminate. Finally, the cold air system, which is installed just after the laminating towers and at the first die cut in the process, cools the web and keeps the layers on the tag stock stable. This feature insures that there is a stable surface on the tag stock against which to die cut.

Still another feature of the present invention is the use of certain lamination films in combination with UV curable adhesives. This combination creates a strong bond of the materials, allowing the insurance card form to be fan-folded at the perforations without the risk of a premature fold at the die-cut. This feature further allows the cards to be removed from the finished forms without adhesive residue or tag stock separation.

Yet another feature of the present invention is the use of pattern coating to apply the first layer of adhesive. The term "pattern coating" refers to the application of adhesive onto the tag stock using a specific pattern so that the lamination only adheres to the pattern of the adhesive and not to the rest of the tag stock. In particular, the pattern coating includes the area on the tag stock that contains the backer. Accordingly, after the backer of the insurance card form has been die cut, a waste matrix is formed that includes the first and second layers of lamination, and the second layer of adhesive. This result is advantageous because the tag stock is left free from lamination and adhesive layers. Therefore, the perforations, and feed hole formation becomes more precise. This result is significant because the ability to fanfold the finished insurance card form, as well as feed the form into standard printers, is greatly enhanced. Further, the use of the pattern coating alleviates the need for adhesive deadener. The term adhesive deadener refers to a material, such as silicone, placed between two other materials that hinders, inhibits or neutralizes their adhesion.

These and other features and their advantages will be apparent to those skilled in the art of manufacturing card and business form assemblies from a careful reading of the Detailed Description of Preferred Embodiments, accompanied by the following drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings,

FIG. **1** is a front view of a card and business form assembly, including a printable carrier sheet having cards that are releasably attached to a backer on the sheet according to a preferred embodiment of the present invention;

FIG. **2** is a rear view of a card and business form assembly including a printable carrier sheet having cards that are releasably attached to a backer on the sheet according to a preferred embodiment of the present invention;

FIG. **3** is cross-sectional view illustrating layers of a card and business form assembly, with thickness exaggerated, according to a preferred embodiment of the present invention;

FIG. **4** is a schematic diagram illustrating a method of manufacturing a card and business form assembly including a printable sheet having cards that are releasably attached to a backer on the sheet according to a preferred method of the present invention;

FIG. **5A** is a front perspective view of the first adhesive applicator of FIG. **4**, showing, in particular, the application of the first adhesive layer according to a preferred method of the present invention;

FIG. **5B** is a top perspective view of the first laminate applicator of FIG. **4**, showing, in particular, the application of a first layer of lamination according to a preferred method of the present invention;

FIG. **6A** is a front perspective view of the second adhesive applicator of FIG. **4**, showing, in particular, the application of the second adhesive layer according to a preferred method of the present invention;

FIG. **6B** is a top perspective view of the second laminate applicator of FIG. **4**, showing, in particular, the application of the second layer of lamination according to a preferred method of the present invention; and

FIG. **7** is top perspective view of the waste removal system of FIG. **4**, showing, in particular the removal of laminate waste from the backer of the card and business form assembly.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

The present invention is an integrated insurance identification card and business form assembly and a method for making the assembly. Although the integrated card and business form assembly and method for making same will be described herein with

respect to insurance cards, those skilled in the card manufacturing arts will readily appreciate the adaptability of the present insurance card and method to other types of identification cards and business forms.

Referring now to the figures, the integrated insurance card and business form assembly is shown. The assembly is generally indicated by reference number **10**. The front and rear views of assembly **10** are illustrated in FIGS. **1** and **2**, respectively. As shown in FIG. **1**, integrated insurance card and business form assembly **10** includes a printable carrier sheet **12** having insurance cards **14** that are releasably attached to carrier sheet **12**, and a surrounding border region **40**, which surrounds adjacently positioned cards **14**. The cards **14** are attached to carrier sheet by a backer **16**, as shown in FIG. **2**.

The various layers of the assembly are illustrated in FIG. **3**. As shown, carrier sheet **12** includes a layer of tag stock **18** having a top surface **20**, which is shown in FIG. **1**, and a bottom surface **22**, as shown in FIG. **2**. The carrier sheet **12** further includes a layer of hold out adhesive **26** and a first layer of lamination **28** having a bottom surface **29** and a top surface **31**. The bottom surface **29** and top surface **31** of first lamination layer **28** are shown in FIGS. **5A** and **5B**, respectively. The backer **16** of assembly **10** includes a second layer of lamination **42** and a second layer of adhesive **44**.

Perforation means **48** and printer guides **51** along the side edges of carrier sheet **12** are further included in assembly **10** and are illustrated in FIGS. **1** and **2**. The perforation means **48** facilitate both the folding and the separation of the assembly **10**. The printer guides **51** facilitate the feeding of the assembly **10** into standard printing and business equipment.

Although other types of tag stock **18** or board stock may be used to make integrated insurance card and business form assembly **10**, 8 point (pt.) C1S light tag is used in the preferred embodiment. The 8 pt. tag is a designation of thickness (weight) of tag stock **18**. As stated above, a particular feature of the present invention is the use of a high-density tag stock. The tag stock **18** used in the present invention is manufactured to a density higher that normal for such applications. This density feature prevents the absorption of inks into the tag stock, which contributes to an improved printability and appearance of the insurance cards and forms.

On the top surface **20** of tag stock **18** is a layer of coating **24**, showing in FIG. **3**, which is pre-applied, and printed indicia **30**. The bottom surface **22** of tag stock **18** is uncoated and includes further printed indicia **30'**. The printed indicia **30** may include

such non-variable information as a company name, as well as variable information such as name, address, policy number, and coverage information. Preferably, the layer of coating **24** on tag stock **18** is a type of clay coating, which is a particular feature of the present invention. As previously discussed, the clay coating gives a higher gloss to the tag stock **18**. Further, the coating insures blocks the absorption of ink into the tag stock **18**. This feature gives the tag stock **18** better printability and appearance than a non-coated material.

On the bottom surface **22** of the tag stock is the layer of hold out adhesive **26** and the first layer of lamination **28**. Hold out adhesive layer **26** is operably applied to the bottom surface **29** (shown in FIG. **5A**) of lamination layer **28** by means such as pattern coating before application of the laminate to the tag stock **18**. The layer of lamination **28** is then adhered to the bottom surface **22** of tag stock **18** by layer of hold out adhesive **26** and forms a permanent bond with the tag stock **18**. Preferably, the bottom surface **29** of the lamination layer **28** is treated with corona treatment, so that the hold out adhesive layer **26** will adhere to the laminate. Corona treatment is a static charge that is applied directly onto the lamination material. Although the lamination material is preferably a type of plastic film, such as polypropylene film, different types of lamination, such as polyester, of varied thickness are contemplated depending on the type of tag or board stock that is used for the integrated card and business form assembly **10**.

As previously discussed, particular features of the present invention include the use of hold out adhesive layer **26** and first layer of lamination **28** that is coated on one side. The use of the first layer of lamination **28** having coating on the bottom surface **29** helps the hold out adhesive layer **26** to adhere to the first layer of lamination **28** and to the tag stock **18** and form a permanent bond. The top surface **31** of the first layer of lamination **28** remains untreated so as to allow the backer **16** of the integrated insurance card and business form assembly **10** to only releasably adhere the cards of the assembly **10** to the carrier sheet **12** and not form a permanent bond. Accordingly, cards **14** may be detached from the carrier sheets **12** without accumulating or bearing any tackiness. Further, The hold out adhesive layer **26** is formulated to help prevent any absorption of adhesive or diving into the uncoated bottom surface **22** of the tag stock **18** by the adhesive. This feature along with the density of the tag stock **18** and tag coating **24** helps to create a solid bond between the first layer of lamination **28** and the tag stock **18**. Finally, the overall appearance of the cards and business forms is improved because of the resulting higher gloss and better printability of the cards and business forms.

Yet another feature of the present invention is the use of pattern coating to apply the hold out adhesive layer **26**. The term "pattern coating" refers to the application of adhesive onto the tag stock **18** using a specific pattern so that the first layer of lamination **28** only adheres to the pattern of the adhesive and not to the rest of the tag stock **18**. The use of the pattern coating alleviates the need for adhesive deadener. The term adhesive deadener refers to a material, such as silicone, placed between two other materials that hinders, inhibits or neutralizes their adhesion. The less materials that are used on the surface of the tag stock **18**, the more precise are the perforations and cuts that are introduced into the tag stock **18**. Accordingly, the ability to fan fold and feed the finished insurance card forms becomes enhanced.

Generally rectangular cut lines **32** define the perimeters of the insurance cards **14**. The cut lines **32** extend through carrier sheet **12**, including the tag stock **18** and first layer of lamination **28**, and are preferably formed by standard methods of die cutting. However, other types of cut lines may be used, such as intermittent or perforated cut lines. As shown in FIGS. **1** and **2**, insurance cards **14** are releasably attached to backer **16** and may be peeled away from surrounding border region **40**, which may include business form information, by lifting an edge or corner of the card **14** until the card **14** is removed from carrier sheet **12**. Insurance cards **14** and surrounding border region **40** are substantially co-planar with each other so as to reduce the various problems associated with the printing of the cards **14** that are positioned above or below the top surface of the surrounding border region **40**.

Backer **16** of integrated insurance card and business form assembly **10** is shown in FIGS. **2** and **3** and includes second layer of lamination **42** having a bottom surface **41** (FIG. **6A**) and a top surface **43** (FIG. **6B**) that is applied to the untreated side of first layer of lamination **28** by layer of pressure sensitive adhesive **44**. Pressure sensitive adhesive layer **44** is operably applied to the bottom surface **41** of second layer of lamination **42**. Second layer of lamination **42** is then adhered to untreated top surface **31** of first layer of lamination **28** by adhesive layer **44**, which creates a fugitive bond between first layer of lamination **28** and second layer of lamination **42**. Although other types of adhesives standard in the art of card assemblies may be employed, pressure sensitive adhesive layer **44** is preferably made of materials such as acrylic-based adhesive or rubber-based adhesive. In the context of this detailed description and the following claims, "fugitive bond" refers to the ability of the pressure sensitive adhesive layer **44** to allow second lamination layer **42** to be removed from the first layer of

lamination 28 without leaving any adhesive residue or tackiness on the first layer of lamination 28. The second layer of lamination 42 is preferably a plastic film, such as polypropylene film, and is preferably .001 mil, or one thousandths of an inch, thick. However, other types of lamination, such as polyester, having varied thickness are contemplated for use.

Preferably, the both adhesion layers are UV curable. The term UV curable refers to materials that are activated, and, in the present invention, acquire the ability to adhere, through the use of ultraviolet light or rays. As previously discussed a particular feature of the present invention is the use of certain lamination films in combination with UV curable adhesives. This combination creates a strong bond of the materials, allowing the insurance card form to be fan-folded at the perforations without the risk of a premature fold at the die-cut. This feature further allows the cards to be removed from the finished forms without adhesive residue or tag stock separation.

As shown in FIG. 2, generally rectangular cut lines 46 define the perimeters of backer **16**. The cut lines 46 extend through first and second layers of lamination **28** and **42**, respectively, and are preferably formed by standard methods of die cutting. However, other types of cut lines may be used, such as intermittent or perforated cut lines. Further printed indicia **30"** (FIGS. 1 and 2) may be included on backer **16**. For example, printed indicia **30"** stating prerequisites for insurance coverage may be added to backer **16**.

The use of backer **16** on carrier sheet **12** is a particular feature of the present invention. The backer **16** acts as a carrier for the finished insurance cards **14**. Further, the adhesive layer **44** of the backer **16** is pressure sensitive so that the cards **14** are not permanently adhered to the backer **16** and can be removed without accumulating any residue or tackiness.

As previously discussed, the use of pattern coating to apply hold out adhesive layer **26** to tag stock **18** is also a feature of the present invention. In particular, the pattern coating includes the area on the tag stock **18** that contains the backer **16**. As shown, backer **16** only extends over the portion of the tag stock **18** that includes the insurance cards **14**. Accordingly, after the backer **16** of the insurance card form has been die cut, a waste matrix is formed that includes the first and second layers of lamination **28**, **42**, and the second layer of adhesive **44**. This result is advantageous because the tag stock **18** is left free from lamination and adhesive layers. Therefore, the perforations, and feed hole formation becomes more precise. This result is significant

because the ability to fanfold the finished insurance card form, as well as to feed the form into standard printers, is greatly enhanced.

A method for making integrated card and business form assembly **10** on a card formation machine, and preferably a flexographic press, is shown in a schematic diagram in FIG. 4. The method is initiated by introducing a tag web **60**, preferably made of 8 pt. tag stock **18** having a coated top surface **20** and an uncoated bottom surface **22**, into a flexographic printing press so that indicia can be printed on the coated top surface **20** of tag stock **18**. The layer of coating **24** on the tag stock **18** is pre-applied, and is preferably a type of clay coating. As stated above, the density of the tag stock **18** and the tag coating **24** are particular features of the present invention because they insure that the adhesive, which is applied to the uncoated bottom surface **22** of the tag stock **18**, does not dive or soak the tag stock **18**. Therefore, a solid bond is formed between the laminate and tag stock **18** and the top surface **20** of the tag stock **18** has better printability and appearance.

The tag web **60** next proceeds through print stations of the press including printing rollers **50** for the printing of indicia on the top surface **20** of the tag stock **18**. Once the printing on the top surface **20** of the tag stock **18** has been completed, the tag web **60** enters an isolation nip roll **52** that is directly in front of a turn bar **54**. The isolation nip roll **52** is designed to control the tensions from the in feed of the press up to the turn bar **54**. This feature helps to improve the quality of the printing of the top surface **20** of the tag stock **18**.

After exiting the isolation nip roll **52**, the tag web **60** is turned by turn bar **54** and enters additional print stations including print rollers **50'** for the printing of indicia on the bottom surface **22** of the tag stock **18**. The turn bar **54**, which is designed to handle light tag to heavy board stocks, preferably includes 5" idlers **80** and 5" slant bars **82** to have a smooth transition of the tag web **60** when it is being turned to print the opposite side of the tag stock **18**. In operation, turn bar **54** uses 100 cfm (cubic feet per minute) of air from an air source **84**, preferably, an air compressor, to float the tag web **60** over the slant bars so as to reduce the friction between the tag web **60** and the bars.

Once the printing on the uncoated bottom surface **22** of the tag stock **18** is completed, the tag web **60** passes through a first laminating tower **62** for the application of first lamination layer **28**. The first layer of lamination **28** is applied to the bottom surface **22** of the tag stock **18** by means of first layer of adhesive **26**. As shown in FIG. **5A**, adhesive layer **26** is preferably pattern coated on the bottom surface **29** of the first

layer of lamination **28** using a first adhesive applicator **63**. First layer of lamination **28** is then applied to the tag web **60** directly after the application of the adhesive layer **26**. The lamination layer **28** is fed from the first laminating tower **62**, which enables the precise control of the tensions of the laminate, and is applied to the tag stock **18** using a first laminate applicator **83**, such as a movable nip roll **64** and idler **81**. As shown in FIG. **5B**, the movable nip roll **64** of first laminate applicator **83** allows for further control of the tensions and pressures of the laminate to insure a superior bond between the first lamination layer **28** and the tag stock **18**. Although the lamination material used is preferably a polypropylene film, different types of lamination of varied thickness are contemplated for use.

As previously discussed, the use of hold out adhesive and laminate having a treated surface is a particular feature of the present invention. The bottom surface **29** of first layer of lamination **28** is preferably treated with corona treatment so that the adhesive layer **26** will adhere the laminate to the tag stock **18**. Preferably, adhesive layer **26** is a type of hold out adhesive, or UV curable adhesive. The hold out adhesive helps to prevent any absorption of the adhesive or diving into the uncoated surface **22** of the tag stock **18** by the adhesive.

Once the first layer of lamination **28** has been applied, the tag web **60** travels through a first UV lamp **72** for the bonding of the applied materials, including the adhesive and lamination layers **26** and **28**, respectively, to the bottom surface **22** of the tag stock **18**. Preferably, a permanent bond is formed between first layer of lamination **28** and tag stock **18**.

The tag web **60** next travels through a second laminating tower **68** for the application of second lamination layer **42**. The second layer of lamination **42** is applied to the top surface **31** of first lamination layer **28** by means of second layer of adhesive **44**. The top surface **31** of the first lamination layer **28** preferably remains untreated so as to prevent the formation of a permanent bond between first layer of lamination **28** and second layer of lamination **42**.

To initiate the application of the second lamination layer **42**, second layer of adhesive **44** is first applied to the bottom surface **41** of second lamination layer **42** using a second adhesive applicator **66**. As illustrated in FIG. **6A**, the adhesive is preferably applied to the laminate using an anilox roll **90**, which controls the thickness of the adhesive layer **44** thereby insuring a proper bond between first layer of lamination **28** and second layer of lamination **42**. Directly after the application of the adhesive layer

44, second layer of lamination **42** is applied to the top surface **31** of first layer of lamination **28**. The lamination layer **42** is fed from the second laminating tower **68**, which enables the precise control of the tensions of the laminate, and is applied to the tag web **60** by means of a second laminate applicator **71**, such as a rubber tint sleeve **70** (FIG. **6B**). By wrapping the laminate around the tint sleeve **70** and applying pressure, this print station is transformed into a gravure station.

Preferably, second layer of adhesive **42** is made of a pressure sensitive adhesive that creates a fugitive bond between first layer of lamination **28** and second layer of lamination **42**. Consequently, a permanent bond is not formed between first layer of lamination **28** and second layer of lamination **42** and first lamination layer **28** will not bear any tackiness or residue if separated from second layer of lamination **42**. The second layer of lamination, which eventually forms the backer **16** of the card assembly **10**, is preferably a plastic film, such as polypropylene film. However, other types of lamination having varied thickness are contemplated for use.

Upon the application of second lamination layer **42**, the tag web **60** travels through a second UV lamp **73** for the marriage of all the applied materials, including first and second layers of lamination **28** and **42**, respectively, to the tag stock **18**. In order to cool the tag web **60** and stabilize the applied laminate films, a cold air system **92** is located just after second laminating tower **68** to blow chilled air across the tag web **60**.

As previously discussed a particular feature of the present invention is the use of certain lamination films in combination with UV curable adhesives. This combination creates a strong bond of the materials, allowing the insurance card form to be fan-folded at the perforations without the risk of a premature fold at the die-cut. This feature further allows the cards to be removed from the finished forms without adhesive residue or tag stock separation.

Next, the cooled tag web **60** enters an additional print station including printing rollers **50"** for the printing of further indicia on the top surface **43** of the second layer of lamination **42**. The tag stock **18** is then cooled by air system **92** an additional time before entering a first die cut station **94**. The cold air system **92** is a particular feature of the present invention. By stabilizing the laminate layers, the air system **92** insures that there is a stable surface on the tag stock **18** against which to die cut.

The first die cut station **94** cuts the shape of the insurance cards **14** from under the tag web **18**. This cut is generally rectangular shaped and goes through the tag stock

18 and the first layer of lamination 28 and stops at the second layer of lamination 42. As previously stated, the use of the second layer of lamination 42 and the pressure sensitive adhesive layer 44 is a feature of the present invention. In particular, the second layer of lamination 42 is used as a base against which to cut during the first die cut. Further, the use of the pressure sensitive adhesive assures that the cards can be removed without accumulating any residue or tackiness.

The tag web 60 next travels to a second die cut station 96 for the formation of the backer 16. The second die cut station 96 cuts the shape of the backer 16 from above the tag web 60. This cut is also generally rectangular shaped and goes through both layers of lamination 28 and 42, respectively, and stops at the tag stock 18. Preferably, the cutting tools of both die cutting stations 94 and 96 are made of D2 steel. However, other types of tool steels typically used in die cutting stations are contemplated for use.

Because the first layer of lamination 28 is pattern coated onto tag stock 18, a matrix 98 is formed after the die cutting as illustrated in FIG. 7, which is removed, leaving the pattern on the tag stock 18. The matrix 98 is then taken to a wind up station 100 to be wound up for disposal. This matrix 98 includes both layers of lamination and layer of pressure sensitive adhesive 44.

As discussed, the use of pattern coating to apply hold out adhesive layer 26 to tag stock 18 is also a feature of the present invention. In particular, the pattern coating includes the area on the tag stock 18 that contains the backer 16. As shown, backer 16 only extends over the portion of the tag stock 18 that includes the insurance cards 14. Accordingly, after the backer 16 of the insurance card form has been die cut, waste matrix 98 is formed that includes the first and second layers of lamination 28, 42, and the layer of pressure sensitive adhesive 44. This result is advantageous because the tag stock 18 is left free from the lamination and adhesive layers. Therefore, the formation of the perforations and the feed holes 109 becomes more precise. This result is significant because the ability to fanfold the finished insurance card form, as well as to feed the form into standard printers, is greatly enhanced.

Once the backers 16 have been formed, the tag web 60 enters a male female hole punch unit 102 that cuts the printer guides 51 along the side edges of the tag stock 18. The tag web 60 next enters a rotary die cutting station 104 where the tag stock 18 is perforated at pre-selected regions. Preferably, two types of perforation blades are used including an 8 tooth per inch blade with a 40 mm gap, which is used in the position where the card form is folded, and a 10 tooth per inch blade with 32 mm gap, which is

used between each fold perforation. The perforation resulting from these blades allows for both folding and separation of predetermined sections of the card assembly **10**. Finally, the perforated tag web **60** is fed into a fan fold machine **106** for fan folding into the finished product.

It will be apparent to those skilled in the arts that many changes and substitutions can be made to the foregoing preferred embodiment and method without departing from the spirit and scope of the invention, which is defined by the appended claims.